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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/581,358	06/02/2006	Matthias Riedel	287524U/S8X PCT	3666
22850 7590 10/04/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
TRAN, CON P				
ART UNIT		PAPER NUMBER		
2614				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/581,358

Applicant(s)

RIEDEL ET AL.

Examiner

CON P. TRAN

Art Unit

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date 08/03/06, 04/28/10
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 13-24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cromer et al. U.S. Patent Application Publication 20020159611 (hereinafter, "Cromer") in view of Freeman et al U.S. Patent 6970568 (hereinafter, "Freeman"), and further in view of Cohen et al. U.S. Patent Application Publication 20030031333.

Regarding **claim 13**, Cromer teaches *an audio system* (10, Fig. 1, see para [0011]; 100, Fig. 3, para [0024]) *providing a dynamic sound field adaptation to follow a listeners position* (the user 12 may change locations with the remote control and have the sound system 100, Fig. 3 automatically reconfigure itself for the change of position, see para [0024]), the audio system comprising:

a personal device position tracking means (including radio transceiver 114, provides each of the speakers 112a-e with a radio transceiver 116a-e, and provides the audio receiver 104 with two fixed transceiver modules 106a-106b, para

[0019]) *for tracking a position of a personal device* (i.e., remote control 108, Fig. 3; the user 12 may change locations with the remote control and have the sound system 100 reconfigure itself for the change of position, see para [0024]); and

a re-calibration means for re-calibrating the sound field such that an optimize speaker delays is placed at a current position of the personal device (the remote control 108, Fig. 3 then reports these distances to the audio receiver 104, Fig. 3 which then uses the new distances to program the correct delays for the digital audio encoding system, para [0024]; automatically optimize speaker delays for a user's location, para [0014]; see Cromer).

Cromer discloses using triangulation to find a position or location (see Cromer, [0019]). However, Cromer does not explicitly disclose *a relative location determination means for determining relative positions of at least all sound emitting components of the audio system with respect to each other*.

Freeman discloses an apparatus and method for analyzing an electro-acoustic system (see Title) in which it is necessary to determine the relative position of the multiple loudspeakers; the relative position of the multiple loudspeakers may be determined by the relative time delay of the acoustic signals of each loudspeaker (see Freeman, col. 2, lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the apparatus and method for analyzing an electro-acoustic system taught by Freeman with the an audio system of Cromer such that to obtain *a relative location determination means for determining relative positions*

of at least all sound emitting components of the audio system with respect to each other as claimed order to minimize measurement time as suggested by Freeman in Abstract.

However, Cromer in view of Freeman does not explicitly disclose *a sweet spot of the sound field is placed at a current position of the personal device; and a personal device detection means for detecting a personal device belonging to a user.*

Cohen discloses a system and method for establishing a listening sweet spot within a listening space (see Cohen, para [0001]) including speakers (12, 13, 14, 15, 16) remote position sensor (27, Figs. 7, 8); the listener (11, Fig. 7) is holding a remote position sensor (27, Fig. 7); causing the sweet spot to shift from its original location to the listening position (para [0046], [0049], see Cohen); simultaneously transmit multiple "pings" from each of the multiple speakers, each with an unique frequency, phase or amplitude; the processing unit will be capable of identifying each of the multiple "pings" and simultaneously processing the location of each of the speakers ([0052], see Cohen).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have incorporated the system and method for establishing a listening sweet spot taught by Cohen with the an audio system of Cromer in view of Freeman such that to obtain *a sweet spot of the sound field is placed at a current position of the personal device; and a personal device detection means for detecting a personal device belonging to a user* as claimed for purpose of optimization of three-dimensional audio listening as suggested by Cohen in Abstract.

Regarding **claim 14**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, further teaches wherein the relative location determination means, the personal device detection means, the personal device position tracking means, and the re-calibration means each are configured to communicate via a network (i.e., digital interconnect format 28, Fig. 1, such as S/PDIF (IEC60958), see Cromer para [0011]).

Regarding **claim 15**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 14. Cromer in view of Freeman and further in view of Cohen, as modified, further teaches wherein the network is at least partly implemented in a form of a wireless communication network (radio frequency, see Cromer para [0019]).

Regarding **claim 16**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 14. Cromer in view of Freeman and further in view of Cohen, as modified, further teaches wherein that the network is at least partly implemented in a form of a wired communication network (i.e., S/PDIF (IEC60958), see Cromer para [0011]).

Regarding **claim 17**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 14. Cromer in view of Freeman and

further in view of Cohen, as modified, further teaches wherein each physically distinguishable unit of the audio system includes membership attribute data representing its identity (i.e., known configuration position, see Cromer para [0024]).

Regarding **claim 18**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, teaches further comprising:

an arbitration means for arbitrating between different requirements set by more than one personal device being detected by the personal device detection means according to a set of criteria (difference parameters measured, see Cohen, Fig. 10, para [0055]).

Regarding **claim 19**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 18. Cromer in view of Freeman and further in view of Cohen, as modified, further teaches wherein one of the criteria is to position the sweet spot for covering a maximum number of personal device positions as tracked by the personal device position tracking means (i.e., one is a maximum number, see Cromer, Fig. 3, para [0024]).

Regarding **claim 20**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 18. Cromer in view of Freeman and further in view of Cohen, as modified, further teaches audio system according to claim

18, wherein one of the criteria is to position the sweet spot to a position of a preferred personal device as tracked by the personal device position tracking means (i.e., the listener is holding a remote position sensor, see Cohen, Fig. 7, para [0046]).

Regarding **claim 21**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, teaches further comprising: physical item detection means for detecting acoustically interfering items around the sound source (analysis of the received signal can provide information on room acoustics, reflective surfaces, see Cohen, para [0053]).

Regarding **claim 22**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, teaches further comprising: a profile storage configured to store preferred settings of the audio system (parameters stored by the manufacturer in the system's memory, see Cohen, para [0064]).

Regarding **claim 23**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, teaches further comprising: a position display configured to display positions of sound emitting components and/or the position of

each personal device detected, and/or the position of the current sweet spot (display 54, Fig. 1, see Freeman, col. 10, lines 28-33).

Regarding **claim 24**, Cromer in view of Freeman and further in view of Cohen teaches the audio system according to claim 13. Cromer in view of Freeman and further in view of Cohen, as modified, teaches further comprising: mode switching means for switching at least between a mode in which the sweet spot follows a listener and a mode in which the sweet spot is kept in a fixed position (configuration button on the remote control, see Cromer, para [0025]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Con P. Tran whose telephone number is (571) 272-7532. The examiner can normally be reached on M - F (8:30 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Vivian C. Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2614

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/CPT/

September 29, 2010

/Vivian Chin/

Supervisory Patent Examiner, Art Unit 2614